

Feed Assessment Tool (FEAST) Questionnaire for Facilitators (Version 5.3)

**A systematic method for assessing local feed resource availability
and use with a view to designing intervention strategies aimed at
optimizing feed utilization**



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Feed assessment tool

Introduction

Feed for livestock is often cited as the main constraint to improved productivity in smallholder systems. Overcoming this constraint often seems an elusive goal and technical feed interventions tend to adopt a scattergun or trial-and-error approach which often fails to adequately diagnose the nature of the feed problem and therefore the means to deal with it. The purpose of the Feed Assessment Tool (FEAST) described here is to offer a systematic and rapid methodology for assessing feed resources at site level with a view to developing a site-specific strategy for improving feed supply and utilization through technical or organizational interventions.

Components of the tool

The tool comprises two main elements. The first is a **focused PRA exercise** (Annex 1) which aims to provide an overview of the farming system with particular emphasis on livestock feed aspects. The second component is a simple and **brief quantitative questionnaire** (Annex 2), designed to be completed with selected farmers under the guidance of the FEAST facilitator. Output from the FEAST consists of a short report in a defined format along with some quantitative information on overall feed availability, quality and seasonality.

Focused PRA

Preliminary scoping exercise with local stakeholders (in advance)

- Visit to the area to meet key local stakeholders including agriculture officials and key farmers to get a general understanding of the livestock production system;
- Identify target livestock systems and farmers;
- Invite a representative group of approximately 15 men and women farmers to a ½ **day** meeting to assess the constraints and opportunities for improving livestock feeding systems. This meeting will consist of a participatory diagnosis with farmers and other stakeholders and visits to local farms to ground-truth the earlier discussions and to provide an opportunity for further discussion

Participatory Diagnosis

1. Introduction

- **Objective:** *Provide a clear picture of who we are, what is our purpose in being here, what we would like to do and how long it will take.*

Introduce both visitors and farmers; explain the purpose and the process of meeting including any potential long-term or short-term benefits for the participants (without raising unreasonable expectations); give an estimate of how long it will take to complete the meeting.

2. General description of farming and livestock system

- **Objective:** *Obtain a general picture of the farming and livestock system so we can ask more detailed questions during the meeting. Make sure we understand the answers and ask for clarification if something is not clear. Be sure to remind participants to include landless farmers when determining averages*

Ask farmer to give a general picture of the farming and livestock system including:

- range of farm sizes,
- household sizes,
- farm labour availability,
- annual rainfall pattern,
- irrigation availability,
- seasonal patterns, and the
- types of animals raised by households.

3. General description of the livestock production system in the area

- **Objective:** *Understand the main purpose of livestock in the farming system, and explore how farmers feed and manage livestock.*

Ask farmers about:

- the types of animals raised (% of households raising these animals and average herd/flock sizes)
- the purpose of raising these animals (e.g. draught, income, fattening, calf production)
- the general animal husbandry (including management, veterinary services and reproduction).
- Ease of access to credit for all
- How available are necessary inputs – plastic, urea, concentrates, etc

4. What are problems, issues, opportunities within the livestock system?

- **Objective:** *Find out if feed is likely to be a major factor limiting animal production, if this is recognized by farmers and what the farmers see as potential solutions.*

Ask the farmers to:

- list the major problems and issues affecting livestock production,
- identify any possible solutions to the identified problems,

- use pair-wise rankings to determine which are the most important problems identified by farmers.

5. Selection of participants to complete the quantitative portion of survey.

- **Objective:** *Select nine or preferably more farmers to represent the various classes of wealth within the area (below average, average, above average).*

Use the average farm size (determined in **section 1.1**) as a starting point to ask farmers to describe:

- how much land a small, medium and large farmer would have,
- how the human population of the area is distributed within these categories (that is, what percentage of the population are landless, have small, medium and large landholdings). Based on this information select three farmers to represent each category of landholding. Try and select farmers towards the middle of each category.

Brief Quantitative Questionnaire

The goal of this section of the questionnaire is to gather specific information from individual farmers about their farming practices, from which the main elements of feed supply and the level of livestock production (in terms of milk and meat) can be extrapolated.

The questionnaire (Annex 2) is designed to be conducted individually with 9 farmers. Each farmer should represent a specific class of farmer within the community; small, medium or large. Landholding should be used to categorize the different farmer types. Small farmers will have below average landholdings, medium farmers will have average land holding, and large farmers will have above average land holdings. The cut-off points between the various categories of landholding should be determined by the group of farmers during the PRA section of the questionnaire.

Ideally, it is recommended that 3 farmers from each category be interviewed (total of 9 farmers) to ensure the results obtained have a reasonable degree of reliability. However, it is possible to gain indicative results from one farmer from each landholding category (3 farmers) should the above selection criteria be applied correctly. The individual responses will allow averages to be calculated to represent typical production for the area in question. Thus, it is important that farmers toward the middle of each wealth category be selected to prevent results becoming skewed.

The results generated from this exercise are not designed to give precise data on the feed situation within the area; rather, the results will be a crude but adequate quantification of feed input and productive output from the farming system.

Guided questionnaire completion – notes

Ask respondent farmers.

1. *Animals* - What type of livestock do you currently own? What is the rough average weight of each category of animal? If farmers are unable to provide an estimate of weight, consult secondary sources for this information. What is the dominant breed (try and get them to specify local breeds if possible)? If farmers are able to provide a breed, the Domestic Animal Diversity Information System (DAD-IS) website (<http://dad.fao.org/>) has an inventory of livestock breeds which may be useful in determining livestock weights.
2. *Crops* - What are the MAIN crops grown by each farmer on their land? How much would the areas NORMALLY yield and what is done with the residue material generated from these cropping activities?
3. *Cultivated fodder* – What are the MAIN types of crops planted on-farm specifically to be utilized as forage material for livestock feeding? How much land is used for each crop?
4. *Collected fodder* - Does the farmer collect any feeds and bring it back to the animal for feeding? If so, how much does this source of feed contribute to the diet of the animal? This feed type will usually be comprised of naturally occurring fodder material from communal areas, roadsides, wastelands and/or public forest areas.
5. *Purchased feed* - What feeds are purchased by farmers (if any) over a 12 month period? Ask farmers how much it costs to purchase the feeds, how often they purchase the feeds and how much they purchase?
6. *Grazing* - Do the animals spend any time grazing? If so, how much does this source of feed contribute to the diet of the animal (as a percentage)?
7. *Contributors to household income* - What are the main contributors to household income? How much (as a percentage) does each named income source contribute to total household income?

If livestock is not named as a main contributor, determine how much it contributes by asking specifically about livestock as a contributor to income.

8. Production.

- *Livestock sales* - How many ruminants (cattle, sheep and goats) have been sold (or slaughtered for home consumption) over the past 3 years? How many males and females? What is the approximate weight of animals sold?
- *Milk production* - What are is average milk yield per day from the farm throughout the year? What is the average price received per litre of milk throughout the year? How much milk is retained by the household throughout the year?

9. Sale of livestock – What is the average price of the main classes of livestock (sheep, goats and cattle) throughout the year?

10. Seasonality.

- *Feed supply* - For each month give a score out of 10 for how much overall feed is available. A score of 10 means there is abundant feed and a score of zero means there is none.
- *What is fed in different months* - For each month indicate how much of the nutrition of the livestock herd is supplied from different sources – the total for each month must add up to 10.

Reporting format

For each site the Feast facilitator should produce a PRA report according to the format set out in Annex 1. This report will describe the main elements of the livestock feeding system. In addition the exercise should yield at least 9 completed Brief Questionnaires (preferably more) which will provide additional information for reporting purposes. These can be entered into the FEAST data template to provide tables and figures to illustrate points made in the report. Overall analysis of feed constraints and potential interventions will be distilled from the PRA reports, the questionnaire results and through discussion between ILRI/CIAT staff and the FEAST facilitator.

Annex 1: Feed assessment tool – PRA report

Name of site/village: Name of sub-district: Name of district: Number of households in survey area (<i>to be considered a household, the dwelling must have a kitchen</i>): GPS co-ordinate of PRA location: Country: Number of participants present:males females Date:		
Start time of PRA:	Finishing time of PRA:	

1. General Farming System Description.

Objective: Obtain a general picture of the farming and livestock system

- 1.1. What is the typical (or average) **farm** size (*“farm size” is considered to be cultivated land*)? Also consider additional lands that may be leased or shared.

acres, hectares or local units (*circle one*)
 If local units what is the conversion ratio?
1 hectare = local units

- 1.2. What is the typical (or average) **household** size? On average, how many people have been living continuously in each household for the past 6 months

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- 1.3. How does the rainfall pattern vary over a year (on a scale of 0-5, where 5 = *heavy rainfall levels* and 0=*no rainfall*)?

[illegible]

- 1.4. Name the cropping seasons that occur in this area. In which months do the various seasons occur (tick the appropriate boxes in the table below).

Name of season	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1.												
2.												
3.												

- 1.5. Is irrigation available in the area? What percentage (%) of households have access to irrigation?

- 1.6. Is labour readily available throughout the year? When is it most required? How much is it to hire (daily paid) labour? Are many people leaving the farm to work in the city/town or seek education?

Labour availability -

When is it most required? -

Price of (daily-paid) labour –

Are many people leaving the farm for work or education? –

Additional comments:

- 1.7. What livestock are raised within the area? What are the animals mainly used for (eg. production of milk for sale, production of milk for household consumption, meat production, draught, manure production etc.)? What percentage (%) of households in the area own each species? What is the average number of animals per household?

Livestock species	Use	% of HH that own the species.	Average number of animals per HH
Local Dairy cows			
Improved dairy cows			
Local dairy buffalo			
Improved dairy buffalo			
Draught cattle			
Draught buffalo			
Fattening cattle			
Sheep			
Goats			
Pigs			
Poultry – village			
Poultry – commercial			
Camels			
Horse			
Donkeys			

- 1.8. Is cash/credit a constraint to crop/livestock production or is it readily available?

- 1.9. Is land for cultivation in short supply? Is fallowing practiced? Is land used for more than one crop per year?

- 1.10. Are agricultural inputs readily available? Are items such as urea, plastic sheeting, cement, irrigation equipment available in the local market?

2. Management of livestock species

Objective: Understand how livestock are managed within the area

- 2.1. How are animals in the area managed (including how livestock are housed, the primary style of feeding (eg. stall fed, tethered, open grazing) and the level of feed processing undertaken (eg. Chopping, urea treatment, mixing etc.))? **Is there any seasonal variation in management methods?**

Housing –

Style of feeding (stall fed, tethered, open grazing) –

Feed processing (chopping, urea treatment, mixing etc.)-

Additional comments:

- 2.2. What veterinary (or animal health) services are available to farmers (including price of treatments and accessibility)?

- 2.3. What methods of livestock reproduction are utilised within the area (including availability of AI, price of semen and AI service, rate of repeat services and the price of bull services)?

Availability of AI –

Price of semen –

Price of AI service –

Rate of repeat services –

Price of bull services –

If bull services are used, are the bulls local or improved breeds?

Additional comments:

3. Problems, issues, opportunities within the livestock system

***Objective:** Find out if feed is likely to be a major factor limiting animal production, if it is recognized by farmers and what farmers see as potential solutions.*

- 3.1. List the major problems faced by farmers in the area with reference to livestock production. What do farmers view as the solution to these identified problems?

Main problems
Problem 1
Solution
Problem 2
Solution
Problem 3
Solution
Problem 4
Solution

Problem 5
Solution

3.2. Complete pair-wise comparisons for these problems in the table below. For each comparison, record which problem is identified as the more important of the two.

Comparison	Which problem is more important to farmers?
Problem 1 v Problem 2	
Problem 1 v Problem 3	
Problem 1 v Problem 4	
Problem 1 v Problem 5	
Problem 2 v Problem 3	
Problem 2 v Problem 4	
Problem 2 v Problem 5	
Problem 3 v Problem 4	
Problem 3 v Problem 5	
Problem 4 v Problem 5	

From the comparison table above, count how many times each problem was rated by the farmers as the most important. The problem with the highest number is considered to be the most important problem limiting animal productivity in the area.

	Problem 1	Problem 2	Problem 3	Problem 4	Problem 5
Number of times the problem was considered the most important					

Selection of 9 individuals to complete the final section of the questionnaire.

The remaining section of the survey should take between 15mins – 45mins (depending on their answers). Individuals should be selected that represent the various classes of farmers (small, medium and large) within the area. Selection will be based on the amount of land utilised for farming. In previous questions (on page 1) the average farm size was determined. Use this figure as a starting point to determine:

- how much land a **small** (below average land size), **medium** (above average land size) and **large** (above average land size) farmer would have. The cut-off points between the categories should be determined by the farmers.

a. To capture any particular phenomenon which are only observed in these large farmers,

b. To investigate possible interactions-synergy between small and large farmers,

Based on this information, determine the distribution of farmers in the area, i.e. percentage of farmers in the area that would be considered small, medium and large. Record this information in the table below.

Category of farmer	Range of land size	% of households that fall into the category
Landless	0	
Small farmer		
Medium farmer		
Large farmer		

After this table has been filled, select three individuals from each category (**small**, **medium** and **large**). Try to select individuals that have land holdings towards the middle of each category. A total of nine individuals should be selected for further interview.

Category of farmer	Name of farmer	Contact number
Small		
Medium		
Large		

This is the end of the group PRA section of the survey.

Thank the unselected farmers for their time and explain how this information will be used.

Annex 2. Quick Feed Questionnaire

This section of the survey should be carried out with 9 individual farmers answering questions based on their own farms. Three farmers should be selected to represent each category of land holding as described above.

Respondent name	
Landholding category of respondent	below average average above average <i>(circle one)</i>
How much land do you farm (hectares)?	
Co-operative/organisation affiliation	
Occupation	
Name of village	
Name of district and subdistrict	
Country	
GPS co-ordinate of interview location	
Date	

1. Livestock holdings

What types of livestock do you currently own? What is the approximate weight of the animals? What is the dominant breed?

	Number of animals	Approximate weight per animal (kg)	Dominant Breed
Local Dairy cows – lactating			
Local Dairy cows - non lactating (dry)			
Local Dairy heifers (>6mths old - < 1 st calving)			
Local Dairy calves (<6mths old) – female			
Local Dairy calves (<6mths old) – male			
Improved dairy cows – lactating			
Improved dairy cows - non lactating (dry)			
Improved Dairy heifers (>6mths old - < 1 st calving)			
Improved Dairy calves (<6mths old) – female			
Improved Dairy calves (<6mths old) – male			
Local buffalo – lactating			
Local buffalo cows - non lactating (dry)			
Local buffalo heifers (>6mths old - < 1 st calving)			
Local buffalo calves (<6mths old) - female			
Local buffalo calves (<6mths old) - male			
Improved buffalo – lactating			
Improved buffalo - non lactating (dry)			

Improved buffalo heifers (>6mths old - < 1 st calving)			
Improved buffalo calves (<6mths old) – female			
Improved buffalo calves (<6mths old) – male			
Bulls or castrated male cattle (> 2 year)			
Bulls or castrated male cattle (>6mths old - < 2 years)			
Bulls or castrated male buffalo (>2 years)			
Bulls or castrated male buffalo (>6mths old - < 2 years)			
Sheep			
Goats			
Pigs			
Poultry			
Camels			
Horse			
Donkeys			

NOTE: In the event that farmers do not know the weight of their animals and cannot provide an estimate, please consult secondary sources for this information.

2. Crops grown on farm

What crops are grown on your farm? How much would you normally expect these areas to yield (in local units)? What do you do with the residue material (as a percentage)? (INTERVIEWER: EXCLUDE CROPS GROWN SOLELY FOR **FODDER PRODUCTION**. DETAILS FOR THESE CROPS WILL FOLLOW)

[illegible]

NOTE: If the residue material produced from a crop is fed to livestock, it is important that an estimate of yield is obtained from farmers. If the farmer is unable to provide an estimate of yield the crop residue material will not be considered as contributing to the diet of the animal.

3. Cultivated fodder

What plants (including deliberately planted forage trees) are deliberately grown on your farm for the sole purpose of feeding livestock? How much area is used to grow these crops?

Fodder crops grown	Area (in local units)	Local unit	1ha= how many local units

4. Collected fodder

Do you collect any other naturally occurring green fodder material from surrounding areas? Naturally occurring green fodder can include: **thinnings, weeds from cropping areas, roadside weeds, naturally occurring grasses, or any other green material that is naturally occurring and collected for livestock feeding.** If so, how much does this material contribute to the diet (as a percentage)?

	Contribution to the diet
Percentage (%)	

5. Purchased feed

What feeds do you purchase over a typical 12 month period? Feeds can include: **crop residues, green fodder, commercially available mixed concentrate feeds, industrial by-products or any other material that is purchased for the purpose of livestock feed.** What is the price of these feeds? How much do you purchase (in kilograms) each time you purchase the feed? How many times throughout the year do you purchase each feed?

[illegible]

6. Grazing

Considering everything eaten by livestock (eg. crop residues, roadside grasses cut and bought back to animal, grown fodder material, purchased feed), how much does **grazing** contribute to this over the course of a year (as a percentage)?

	Contribution to the diet
Percentage (%)	

7. Contributors to household income

Select the **four main** sources of household income from the list? What percentage (%) of household income do each of these sources contribute?

Income Source	Contribution to Income (%)
Cash crops	
Charcoal making	
Dairying	
Draft animals	
Fattening - cattle	
Fattening - sheep and goats	
Food crops	
Handicrafts	
Laboring/service	
Off- farm business	
Poultry (eggs)	
Poultry (meat)	
Remittances	
Other (Specify)	
Other (Specify)	
Must add to 100%	100

8. Production per household

- 8.1. How many ruminants (cattle, sheep and goats) have been sold (or slaughtered for home consumption) over the past 3 years? What was the approximate weight of the animals sold?

	Number of males sold	Approximate weight	Number of females sold	Approximate weight
Number of <u>cattle</u> sold over the past 3 years				
Number of <u>goats</u> sold over the past 3 years				
Number of <u>sheep</u> sold over past 3 years				

8.2. What is the average milk yield per day of your household throughout an average year? What is the average price received for milk per litre? What is the average amount of milk retained by the household each day?

[illegible]

9. Sale of livestock and livestock products

What is the average price received for livestock and livestock products throughout a year?

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Currency
Market price for <u>cattle</u> (per head)**													
Market price for <u>sheep</u> (per head)***													
Market price for <u>goats</u> (per head)***													

**If respondents are having trouble determining an average price for cattle. Ask for them to imagine a 400kg fattened castrated male, and how much would that be worth at different periods in the year?

*** If respondents are having trouble determining an average price for sheep or goats. Ask them to imagine a 30kg fattened castrated male, and how much would that be worth at different periods in the year?

10. Seasonality

(INTERVIEWER—TO MAKE THE FOLLOWING SECTIONS QUICKER AND EASIER FOR RESPONDENTS, SHOW THEM THEIR RESPONSES AS THEY ARE ANSWERING. IT WILL ALLOW THEM TO VISUALIZE TRENDS).

10.1. How does the availability of feed vary over an average year? (on a scale of 0-10, where 10 = excess feed available, 5= adequate feed available and 0=no feed available)

[illegible]

10.2. How much do the various feeds contribute to the diet of the animal throughout a year? Proportion of nutrition derived from different sources.

The different sources **must add to 10**

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Crop residues (eg. Rice straw, maize stover)												
Legume crop residues from legume crops (eg. chickpeas, lentils)												
Green forage (eg. roadside weeds, cut fodder crops)												
Grazing												
Concentrates (eg. Wheat bran, grains, oilseed cakes)												
Other – Specify												
Other – Specify												
<i>Must add to 10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>10</i>

Questionnaire complete.

Thank the participants for their time!!